



Management of Nonfriable Asbestos Containing Materials

Air Pollution Control Program fact sheet

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Introduction

This document is one in a series of fact sheets designed to assist you in becoming aware of the department's asbestos requirements. This particular document contains information regarding how to properly remove and dispose of nonfriable asbestos containing materials.

Categories of Asbestos Containing Materials

There are three categories of asbestos containing materials (ACM). These materials should be identified by a certified inspector prior to any renovation or demolition activities. They are as follows:

- **Friable asbestos containing material**

Any material containing more than one percent asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. Examples of friable materials include sprayed or troweled materials such as acoustical ceiling spray or boiler insulation, paper pipe insulation and drop-in ceiling tile.

- **Category I nonfriable asbestos containing material**

Asbestos containing packings, gaskets, *resilient floor covering and asphalt roofing products containing more than one percent asbestos. *(Any vapor barrier on resilient floor coverings is considered friable asbestos.)

- **Category II nonfriable asbestos containing material**

Any nonfriable material, other than category I materials, that contain more than one percent asbestos. Examples of category II materials include asbestos cement wall or roof shingles and cement pipe.

Depending on the type or category of asbestos containing materials present on a project and the work practices used during demolition or renovation to remove them, the materials may or may not be regulated by the department's asbestos requirements. To determine the applicability of the department's asbestos requirements, one must determine if the asbestos from your project will meet the definition of Regulated Asbestos Containing Material (RACM).

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Regulated Asbestos Containing Material (RACM) includes friable asbestos containing materials; category I nonfriable materials that have become or will become friable or have been subject to sanding, grinding, cutting, abrading or burning; or category II nonfriable materials that have a high probability of becoming or that have become crumbled, pulverized or reduced to powder due to the work practices used during the course of demolition or renovation.

Removal of Category I and II Nonfriable Materials

Most nonfriable materials are not regulated by the department, unless they are in poor condition or are rendered friable by improper work practices during demolition or renovation. Category I nonfriable materials can be left in place during demolition, provided the work practices utilized will not make the material friable. However, for certain types of category I materials, such as floor tile and linoleum, the department generally recommends their removal prior to demolition as these materials could easily be rendered friable during the demolition. Also, leaving these materials in place may increase the quantity of asbestos waste resulting in increased disposal costs. It should be noted that materials that contain or are coated with asbestos can not be used as clean fill materials. If Category I ACM is left in place, work practices must be implemented to ensure the material is not made friable during removal or demolition. Any activity that will result in the material being subject to sanding, grinding, cutting, abrading, or burning may cause the material to become subject to regulation, depending on the quantity of ACM involved.

If a threshold or regulated quantity of RACM, including Category II materials, will be impacted, they must be removed prior to demolition or renovation activities. Category II materials must be removed in a manner that does not render the material friable. Improper work practices or materials in poor condition are considered RACM. If the material is crumbled, pulverized or reduced to powder during demolition or removal activities, the material may become subject to regulation depending on the quantity of RACM involved.

Any project involving a threshold amount of RACM (160 square feet, 260 linear feet, or 35 cubic feet) must be performed by a registered asbestos abatement contractor. This includes situations where the material was originally nonfriable but is now in poor condition and situations where nonfriable materials will be made friable during demolition, renovation or removal.

Examples of Nonfriable Materials and Acceptable Removal Techniques

- Category I Asphalt Roofing Material is not regulated by the department as long as the material is in good condition and it is not made friable during removal or demolition. This material can generally be left in place during demolition activities, but still must be disposed of at a permitted landfill or transfer station. You should contact your disposal facility to determine how they will require this material to be packaged and delivered. Roofing material may be sliced by a manual cutter or knife, however, the use of mechanical devices such as a rotating blade roof cutter or other equipment will render roofing products friable. The Environmental Protection Agency (EPA) has determined that use of this kind of equipment on more than 5,580 square feet of roofing will make the project subject to regulation. If this is the case, then the project must be performed by a registered asbestos abatement contractor in accordance with all applicable asbestos work practice requirements.
- Category I Vinyl or Asphaltic Floor Tile is not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. Tile can generally remain in place during demolition, but care must be taken to ensure the

material is left largely intact. Since it is difficult to control the degree of breakage that may occur, the department generally recommends that floor tile be removed prior to demolition. Tile may be removed from a structure as an unregulated project if manual methods are used and the tile is removed in largely intact pieces. One acceptable nonfriable removal method would be to flood the tiled area with water to loosen the tile and then popping the material from the subfloor with a spud hoe. Breakage of the tile should be minimized. Other methods include the use of mastic reducers or an infrared heating device to loosen the tile from the glue or mastic before removing the tile with manual tools as discussed above. In both cases, the tile should be adequately wetted with amended water throughout the removal process and properly packaged while wet. This will help to reduce any potential asbestos emissions from the material.

If the tile is not removed in largely intact pieces, even if removed by the manual methods discussed above, it will be considered RACM. In addition, the use of any mechanical devices or bead blasters for removing tile will subject the material to regulation as RACM. The removal of tile as RACM must be performed by a registered asbestos abatement contractor in accordance with all applicable asbestos work practice requirements.

- Category I Nonfriable Mastic is not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. This material must not be dry scraped or sanded. Use a mastic reducing solvent or material having a flashpoint above 140 degrees Fahrenheit to loosen the material from the subfloor. Then use a manual tool such as a spud hoe to remove the material. Any activity that would sand, grind, cut or abrade this material during removal would subject it to regulation as RACM. In this event, the project would be required to be performed by a registered asbestos abatement contractor in accordance with all applicable asbestos work practice requirements.
- Category I Vinyl Sheet Flooring (Linoleum) is not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. Sheet vinyl on wooden subflooring can generally remain in place during demolition, but care must be taken to not disturb the vapor barrier as this material is considered inherently friable. Since most demolition activity will result in the backing being disturbed to some extent, the department would recommend that this material be removed prior to demolition. To remove sheet vinyl as a nonregulated project, the material must be removed adhered to the subfloor, so as to not expose the backing of the material. Exposure of the backing of the sheet vinyl, such as would occur if the material is stripped from the subfloor, will subject the material to regulation if more than a threshold quantity of RACM is disturbed. Removal in this manner must be done by a registered abatement contractor in accordance with all applicable asbestos work practice requirements.
- Category I Caulking is not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. This material can be left in place during demolition provided it is not rendered friable during the demolition or renovation project. When removing caulking, in the case of window replacement, you may elect to remove the whole window unit. The material should be kept wet and the entire window wrapped for disposal. If the windows are not to be removed, then the caulking should be wetted and removed carefully not to sand, cut, grind, or abrade the material. The material should be containerized for proper disposal at an approved disposal facility. The landfill or transfer station should be contacted for any specific packaging or labeling requirements.

If the material has become brittle and crumbles upon removal, the material should be considered RACM. In this case, the removal must be done by a registered asbestos abatement contractor in accordance with all applicable asbestos work practice requirements, if threshold quantities of the material are present.

- Category II Asbestos Cement Siding and Cementitious Wall Board is not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. This material must be removed prior to demolition or renovation activities that will cause significant breakage, crumbling, or pulverizing of the material. When removing this type of material, the material should be removed manually by either driving the nails through the material or snipping off the nail or screw heads. The panels should be removed largely intact and should be lowered carefully to the ground. The material should be kept wet with amended water to further reduce the possibility of emissions. The material should be wrapped or packaged in accordance with the requirements of the disposal facility that will be used.

Beating, prying and dropping of the panels from an elevated position will likely cause the material to become crumbled and subsequently regulated as RACM. If more than a threshold amount of the material cannot be removed without breaking or crumbling the material, then the project must be performed by a registered asbestos abatement contractor in accordance with all applicable asbestos work practice requirements.

- Category II Asbestos Cement Roofing shingles are not regulated by the department as long as the material is in good condition and is not made friable during demolition or renovation activities. This material must be removed prior to demolition or renovation activities that will result in significant breakage, crumbling or pulverizing of the material. The removal of this material should follow the same protocols as stated above for asbestos cement siding. However, using amended water on the material may not be appropriate if it will compromise the safety of workers removing the material.

Disposal of Nonfriable Materials

Nonfriable asbestos containing materials are not subject to the department's asbestos waste disposal requirements. However, this material is still considered a solid waste and must be properly disposed of at an approved landfill or transfer facility in accordance with the Solid Waste Management Law. You should contact the facility where you plan to dispose of your asbestos waste prior to removal to determine any specific procedures for waste delivery such as packaging, wetting, and labeling.

Nonfriable materials that become RACM must be handled in strict accordance with the requirements for asbestos waste disposal. Projects involving RACM must be performed by registered asbestos abatement contractors who are trained in the provisions for proper handling, packaging and waste disposal. These requirements include packaging the material in leak tight containers or wrapping and properly marking and labeling the bags with an asbestos warning label and information identifying the generator of the waste. The material must be taken to an approved disposal facility, such as a sanitary landfill, that accepts asbestos containing waste.

Notification Requirements

Provided the nonfriable ACM is in good condition and not made friable during the course of removal or demolition, there is no requirement for notification to be provided to the department prior to removal during renovation projects. However, the department encourages courtesy notifications to be submitted for these projects. Notification is required for all demolition projects involving regulated structures, regardless of asbestos content.

In the event that the nonfriable ACM is in poor condition (friable) or will be removed in a manner that will make it regulated as RACM, then notification must be provided 10 working days prior to the start of the project. This notice should be provided by the asbestos abatement contractor who is to perform the removal.

Minimizing Exposure

For individuals working with nonfriable asbestos containing materials, respiratory protection consisting of high efficiency particulate air (HEPA) filtered respirators is recommended. Disposable protective clothing is also advised. An amended water solution consisting of approximately one ounce of liquid detergent to one gallon of water should be used before and during removal to keep the material adequately wet to minimize fiber release. Amended water should not be used on roofing projects where fall hazards exist or near electrical sources. Waste materials should be promptly bagged or wrapped for disposal and taken to a permitted solid waste landfill or transfer station.

While the removal of nonfriable materials may not be regulated under the department's asbestos requirements, the material can still pose a safety risk if handled improperly. For this reason, the Occupational Safety and Health Administration (OSHA) also has requirements governing asbestos removal to ensure adequate protection of the workers performing the removal. For any project involving asbestos, whether regulated by the department or not, the department would recommend the use of trained asbestos professionals that are familiar with the OSHA standards for any asbestos removal work. To learn more about OSHA standards for asbestos removal, you may contact OSHA at one of the numbers listed below.

OSHA in St. Louis (eastern Missouri area) - 1-800-392-7743

OSHA in Kansas City (western Missouri area) – 1-800-892-2674

Asbestos Contact Information

For more information on the department's asbestos requirements, you may contact the department's Air Pollution Control Program or one of the department's other offices with the following contact information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102
(573) 751-4817 - phone
(573) 751-2706 - fax
www.dnr.mo.gov/alpd/apcp

Other Department Offices

Kansas City Regional Office	Lee's Summit	(816) 622-7000
Northeast Regional Office	Macon	(660) 385-8000
St. Louis Regional Office	St. Louis	(314) 416-2960
Southeast Regional Office	Poplar Bluff	(573) 840-9750
Southwest Regional Office	Springfield	(417) 891-4300
Environmental Assistance Office	Jefferson City	1-800-361-4827

Local Agencies

In Missouri, there are also four local agencies delegated by the department to enforce the asbestos requirements. These local agencies may also have more stringent local ordinances that they enforce as well. Prior to performing a project in one of the following jurisdictions, you should contact the appropriate local agency to determine if any additional requirements apply.

Jurisdiction	Agency	Telephone
Kansas City proper	Kansas City Health Department, Air Quality Section	(816) 513-6314
St. Louis City proper	St. Louis Division of Air Pollution Control	(314) 613-7300
St. Louis County	St. Louis County Health Department	(314) 615-8923
Springfield proper	Springfield-Greene County Health Department	(417) 864-1662

Additional Asbestos Related Guidance Documents

For more specific information on the department's requirements in regard to asbestos, please reference the additional guidance documents listed below or contact the department or appropriate local agency at the contact information listed above.

- *Asbestos: What is it and Why is it a Concern?*
- *Asbestos Requirements for Demolition and Renovation Projects*
- *Requirements for Fire Training Exercises Involving Structures*
- *Natural Disaster Assistance for Missouri Citizens - How to Handle Asbestos Containing Debris*

For more information

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176, Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-4817 office
(573) 751-2706 fax
www.dnr.mo.gov/alpd/apcp Program Home Page